

Kingdom of Tonga



NATIONAL EMERGENCY MANAGEMENT PLAN

**Prepared under the provisions of the
*Emergency Management Act 2007***

Foreword

Tonga is susceptible to a range of hazards, both natural and technological, which have the capacity to impact significantly on the country.

This National Emergency Management Plan has been developed by the Planning Working Group of the National Emergency Management Committee, and provides a framework through which holistic and comprehensive emergency management can be undertaken within the Kingdom.

The focus, as required by the Emergency Management Act 2007 is on minimising the effects of hazards on Tonga by ensuring a co-ordinated effort in risk management within the community utilising partnerships of Government and Regional agencies, and non-government bodies with a responsibility or capability in emergency risk management and emergency response.

This plan has been designed around the Risk Management Standard AS/NZS4360:2004, engaging the philosophy of a multi-agency, multi-sectoral approach to risk minimisation, using the CHARM (Comprehensive Hazard and Risk Management) process developed by SOPAC.

The plan identifies the risk environment for the Kingdom and outlines the key institutional and programming components relative to effective risk management and emergency response.

The Plan is not designed to usurp the incident management responsibilities of the various emergency services or other organisations within the community that respond to events which fall within their normal daily activities. Instead the plan is designed to enhance the capacity of Government to more effectively plan for and respond to emergency situations. This is achieved through the combined processes of hazard and risk analysis, which provides a more realistic base of information upon which to frame operational plans and procedures.

The Plan is a dynamic document which may be extended in the future to incorporate any additional risk treatment options as they are identified following formal hazard and risk analysis. The Plan will also be amended in line with changes in legislation and current best practice, and to reflect lessons learned from the impact of hazards and other emergency situations that may arise.

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Authority for Planning

This National Emergency Management Plan has been developed on behalf of the National Emergency Management Committee, under Section 28 (1) of the Emergency Management Act 2006, by the National Emergency Management Office and is submitted for approval.

Manager, National Emergency Management Office

Date. / /

This National Emergency Management Plan has been reviewed by the National Emergency Management Committee, complies with Section 28 (1) (a) – (g) of the Emergency Management Act 2006 and is endorsed for adoption.

Chair, National Emergency Management Committee

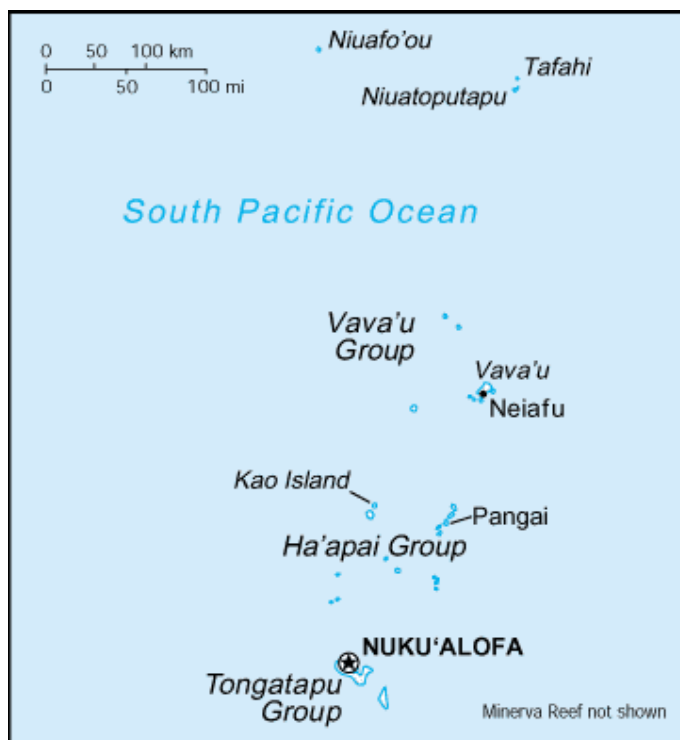
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Country Background

Description of the Country

Geographic

The Kingdom of Tonga is located in the South Pacific Ocean, between latitudes 15 S and 23.5 S; Longitude 173 W and 177 W, south of Samoa and southeast of Fiji. The total land area is 747.34 sq. km. spread over 700,000 sq. km. of territorial sea. Tonga consists of 171 islands, 36 of which are inhabited. The capital Nuku'alofa is located at the main island of Tongatapu. Tonga is 13 hours ahead of Greenwich Mean Time.



Climate

The climate is pleasant, slightly cooler and less humid than most tropical areas. The temperature ranges between 18-25C during May through September and 24-32C between October and April. Trade winds blow a constant 13-18 knots all the year round. The mean annual temperature in Nuku'alofa is 24.7C, with mean humidity of 76.9%. Average rainfall is 1775.5mm.

Terrain

Many of the islands are coralline with a covering of volcanic ash, comparatively flat and often encircled by fringing reefs. There also some islands of volcanic origin such as 'Eua and Niuafu'ou, with high cliffs and deep forests. The highest point in the Kingdom (186.5 metres) is in Vava'u.

Vegetation

The islands are covered with plant life and the soil is very fertile but not more than four metres in depth. Coconut palms cover the islands except where areas have been cleared for crops of bananas, pumpkins and tropical crops.

Population

The population of approximately 101,134 (based on last national census in 2006) is distributed throughout the islands of Tonga with a 3:1 Rural/Urban dispersement. The islands are in four main groups Tongatapu, Vava'u, Ha'apai, Niuatoputapu and Niuafu'ou. Nuku'alofa, the capital, has a population of approximately 71206.

Education

Free and compulsory education is available for all children between the age of six and fourteen years. Tonga boasts a 95% literacy rate. The high degree of literacy in Tonga means that the workforce is well educated. Most people have attended secondary school and they have reasonable access to skill training or tertiary qualification. (1)

Language

Tongan and English are official and spoken languages.

Government

Government consists of three main bodies, the Executive, Parliament and the Judiciary.

The Executive

The King in Privy Council and the Cabinet, serve as the Executive. The Monarch appoints the Cabinet as well as the Governors of Ha'apai and Vava'u. The administration of the public sector of which Government Ministries and quasi-government bodies exist, come under the jurisdiction of the Prime Minister. Cabinet becomes the Privy Council when presided over by the Monarch. It is the highest authority in the country.

The Parliament:

The Parliament is unicameral and is composed of an appointed Speaker by the Monarch, the Cabinet, nine Nobles elected by 33 hereditary Nobles and nine representatives elected by the people. General Elections are held every three years.

The Judiciary:

The Privy Council, with the addition of the Chief Justice becomes the Court of Appeal. Below this, are the Supreme Court, the Land Court and the Magistrates Court.

Infrastructure

Communications:

Telecommunications:

Tonga has access to international communications through satellite systems. Access to domestic communication systems, including land-line and mobile telephone, facsimile, e-mail, internet, services is readily available. The two service providers, Tonga Communication Corporation and TonFon, a division of Shoreline Limited, operate throughout the Kingdom and provide telephone, radiotelephone and satellite telephone services. The telephone systems have alternative power supply in place. The service providers have their own emergency communication system throughout the Kingdom, and are well prepared to respond to any major loss of service.

Radio & Television:

There are three FM radio stations covering Tongatapu, one FM station in Vava'u and one AM radio station with national coverage. Two free to air television services operate on Tongatapu, along with a subscription-driven satellite television service. Weekly newspapers are printed in Nuku'alofa and Vava'u.

Power:

Reticulated power is provided via by diesel generation on the main islands. The smaller, less populated islands have no reticulated power service. Gas power (e.g. for cooking purposes) is provided via a decanted cylinder service only.

Water:

Reticulated water supply is provided on the main islands. The smaller, less populated islands have no reticulated water service, and rely on rain water catchment.

Transportation

Road:

Most roads within the major centres of population and between those centres are sealed. Outside those areas, and particularly in the outer island groups, many roads are unsealed. Tonga has a very high level of vehicle ownership, and particularly on Tongatapu, traffic congestion is beginning to be experienced.

Sea:

Regular international shipping services link Tonga through the ports of Nuku'alofa and Neiafu. Internally, there are regular ferry services from the capital to the outlying island groups. There is a substantial port complex at Nuku'alofa, including a container dock facility, and smaller facilities on the outer islands. International cruise liners also use Nuku'alofa as a port of call.

Air:

Air New Zealand, Air Pacific, Pacific Airlines operate direct air services to Tonga from Suva, Apia, Pago Pago, Auckland, Sydney and Honolulu. The Tongan-owned airline Tonga Air and Chatham Pacific provide daily domestic air services to the outer island groups. There are six (6) operational airports in the Kingdom namely Fua'amotu at Tongatapu (international and domestic), Lupepau'u at Vava'u (international and domestic), Salote Pilolevu at Ha'apai, Kaufana at 'Eua, Mata'aho at Niuatoputapu and Lavinia at Niuafu'ou. All airports are administered by the Ministry of Civil Aviation.

IndustryAgriculture:

Crops are grown for subsistence, sale on the local market and increasingly for export. The most successful export crops are squash pumpkin, sold exclusively to Japan and South Korea, and vanilla, purchased by France, Japan and the United States. Traditional root crops and vegetables such as taro, kumara, cassava, watermelon and yams are exported to Tongan communities in New Zealand, Australia and the United States.

Fishing:

There is a significant international fishing fleet based in Tonga, with long line tuna fishing as the main activity. There is also a substantial reliance on local fisheries, both for subsistence and for local trade.

Tourism:

The tourism industry contributes a major share of the economy with foreign exchange earnings reaching the 20 million-dollar mark per annum. Tonga is becoming recognised as a prime tourist destination, particularly in relation to diving and sport fishing.

Commercial ServicesBanking:

Three private banking companies provide full commercial facilities. In addition, the Tonga Development Bank, established and backed by Government, provides term loans and financial services to industry and entrepreneurial ventures. It can and does provide equity participation in approved commercial projects.

Emergency ServicesHealth:

Major Hospital on Tongatapu, smaller hospitals on Vava'u (Neiafu) and Ha'apai (Pangai). Other islands and the outlying areas of the main islands are serviced by medical clinics. A basic ambulance service is provided on Tongatapu and Vava'u.

Police:

There is a police presence on all main islands.

Fire Service:

Fire Service presence on Tongatapu, Vava'u and Ha'apai. Plans are in place to have additional fire appliances spread throughout the Kingdom.

Emergency Management Committees

National Emergency Management Committee

Chair	Minister of Works
Members	Chief Secretary and Secretary to Cabinet Director of Works Secretary for Finance and Planning Director of Agriculture, Forestry, Fisheries and Food Director of Health Police Commander Commander, Tonga Defence Service Secretary for Lands, Survey, Natural Resources and Environment Director of Education Manager, National Emergency Management Office as Secretary

National Emergency Recovery Committee

Chair	Minister of Works
Members	Chief Secretary and Secretary to Cabinet Secretary for Finance and Planning Director of Works Secretary of Foreign Affairs Commander, Tonga Defence Force Representative of NGOs who may be coopted as required Manager who shall be the secretary

National Emergency Operations Committee

Chair	Minister of Works
Members	Director of Works

	Police Commander Commander, Tonga Defence Services Secretary for Foreign Affairs Manager, National Emergency Management Office
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District Emergency Management Committee

Chair	Governor/Government Representative
Members	Appointed by Chair with the approval of the Minister of Works

Village Emergency Committee

Chair	Town Officer
Members	Appointed by the town officer with the approval of the Minister of Works

Note: All Committees have power to co-opt.

Roles of the Committees

Functions of National Emergency Management Committee

- (a) make policy decisions of national significance relating to emergency management for the Kingdom;
- (b) coordinate the development and implementation of effective emergency management for the Kingdom;
- (c) approve and regularly review the National Emergency Management Plan;
- (d) ensure that operational procedures in the National Emergency Management Plan are regularly exercised;
- (e) have in place arrangements with other nations and relevant bodies to provide support to the Kingdom during major emergencies;
- (f) provide support to District Emergency Management Committees; and
- (g) coordinate effective emergency management and emergency response in communities before, during and after the impact of an event.

Functions of National Emergency Recovery Committee

- (a) coordinate the recovery phase following any event that may impact on the Kingdom of Tonga;
- (b) carry out detail damage assessments in partnership with the District Emergency Management Committees;
- (c) coordinate the provision of emergency relief to those areas that have been affected by an event;
- (d) coordinate all recovery and rehabilitation works that are carried out in the affected area.

Functions of the National Emergency Operations Committees

- (a) activate ministries and organisations in response to an event that may happen, is happening or about to happen;
- (b) liaise with ministries, non government organisations and community groups in the execution of their emergency management roles and responsibility
- (c) carry out initial damage assessment;
- (d) collate and prioritise disaster relief requirements; and
- (e) manage the distribution of immediate relief supplies.

Functions of District Emergency Management Committees

- (a) to prepare, and regularly review, a District Emergency Management Plan;
- (b) to develop and implement effective emergency management in the district in accordance with any relevant policies issued by the National Emergency Management Committee;
- (c) to provide reports and make recommendations to the National Emergency Management Committee about disaster risk reduction and emergency management activities in the district;
- (d) to regularly conduct exercises of operational procedures documented in the District Emergency Management Plan;
- (e) to provide support to communities to ensure effective emergency management in communities before, during and after the impact of an event;
- (f) to ensure community awareness of emergency management, including ways of mitigating, preparing for, responding to and recovering from an emergency;
- (g) to identify and coordinate the use of resources for emergency operations in the district;
- (h) to manage emergency operations in the district in accordance with any policies and procedures issued by the National Emergency Management Committee;
- (i) to establish and review communications systems in the district for use when an event threatens or an emergency happens; and
- (j) to ensure information about an event or an emergency in the district is promptly provided to the National Emergency Management Committee.

Functions of Village Emergency Committee

- (a) to develop and implement effective emergency management in the village in accordance with any relevant policies issued by the National Emergency Management Committee;
- (b) to provide reports and make recommendations to the District Emergency Management Committee about disaster risk reduction and emergency management activities in the village;
- (c) to provide support to communities to ensure effective emergency management in communities before, during and after the impact of an event;

- (d) to ensure community awareness of emergency management, including ways of mitigating, preparing for, responding to and recovering from an emergency;
- (e) to identify and coordinate the use of resources for emergency operations in the Village
- (f) to manage emergency operations in the village in accordance with any policies and procedures issued by the National Emergency Management Committee;
- (g) to establish and review communications systems in the village for use when an Event that threatens or an emergency happens; and
- (h) to ensure information about an event or an emergency in the village is promptly provided to the District Emergency Management Committee.

Frequency of Meetings

The committees should meet on a regular basis, at least once each quarter in accordance with Section 25 of the Emergency Management Act 2007.

Administrative requirements for the National Emergency Management Committee and will be the responsibility of the National Emergency Management Office.

Reporting Requirements

The National Emergency Management Committee will report annually (and at other times as may be directed) regarding its activities to the Cabinet. The annual report shall include such content as required by the Emergency Management Act 2006 and copies thereof shall be furnished to all members of the National Emergency Management Committee.

Emergency Management Plans

National Emergency Management Plan

It is the responsibility of the National Emergency Management Office, on behalf of the National Emergency Management Committee, to maintain the National Emergency Management Plan

District Emergency Management Plans

It is the responsibility of the various District Emergency Management Committees to develop and maintain a District Emergency Management Plan, in accordance with Section 29. (1) of the Emergency Management Act 2006.

Copies of District Emergency Management Plans (along with any amendments made from time to time) are required to be submitted to the National Emergency Management Office for ratification, and are to be maintained as annexes to the National Emergency Management Plan.

Review of the Plan

The National Emergency Management Plan should be reviewed by a working group from the National Emergency Management Committee as follows:-

August	Working group reviews and amends (as required) the main plan
September	Draft plan submitted to full National Emergency Management Committee for acceptance/amendment
October	Reviewed plan submitted to Cabinet for endorsement

The master contact list for all organisations/persons involved in the Kingdom's emergency management arrangements should be updated at each National Emergency Management Committee meeting and will be held by the National Emergency Management Office.

Training Program

The NEMC will ensure that a suitable emergency management training program is designed and implemented, in collaboration with any training provided by/through the National Emergency Management Office. The training program will include specific training, through workshops, discussion forums and formal instruction, in order to maintain the emergency management knowledge and understanding levels of all participants at the highest possible level.

The NEMO will arrange for members of the NEMC to be made aware of training courses being offered by/through the South Pacific Applied Geoscience Commission (SOPAC) or any other appropriate agency.

Public Education

The community is to be informed of the emergency management arrangements the Kingdom has in place by the conduct of public meetings, information distribution, newspaper articles, advertisements and brochures as follows.

Government Offices

- The National Emergency Management Office is to ensure each Government

public office has on display any public awareness material available

- The current copy of the National Emergency Management Plan is to be available for public viewing in the National Emergency Management Office.

Business

- The National Emergency Management Office should ensure all Tourist Information Centres, Resorts and other centres have ample supplies of brochures and information on the Kingdom's emergency management arrangements.

Industry

- The National Emergency Management Office will conduct meetings with industry groups to ensure their members are aware of the Kingdom's emergency management arrangements.

Community

- The National Emergency Management Office will conduct public information sessions to present the current arrangements in place to assist the community to prepare for potential hazard impacts or threats. Such meetings should be held in all areas of the Kingdom, and should be available in Tongan and English language versions.

Media

- The National Emergency Management Committee will provide a media release on the adoption of the new National Emergency Management Plan, and following any subsequent annual updates of the Plan.
- The National Emergency Management Office will arrange for a disaster preparedness information page for inclusion in local newspapers at appropriate times.

Hazard Analysis

Cyclone:

The tropical cyclone season in Tonga is from November to April, although tropical cyclones have been known to occur outside this period (e.g. TC Keli, June 1997).

Since 1960, Tonga has averaged about one tropical cyclone per year, with four (4) events recorded in the year 1990. Severe tropical cyclones have occurred in 1961 (TC Flora), 1982 (TC Isaac) and 2001/2002 (TC Waka).

	Name	Date	Area	Extreme Wind	Min. Pressure	Centre	Est Damage	Intensity
1	Nil	17 -19 Jan 1960	E/Ntt & W/Vv	>63kt gust90kt				Storm Force
2	Nil	14 -19 Mar 1961	VV/HP/TBU	100gust 150kt			2 lives lost in Neiafu	Severe
3	Nil	22-23 Nov 1964	S/Tonga	40kts gust55kts				Minor
4	Nil	25/26 Feb 1969	S/Tonga	DO				Minor
5	Juliette	3-4 April 1973	Ha'apai	50kt gust 75kt				Storm
6	Betsy	31Jan-3Feb 1981	Tonga	40kt gust 52kt				Gale
7	Isaac	28 Feb-3 Mar 82	Hp/TBU	Gust 130kt	976.4 hpa	Eye passed over Hp	T\$18.7 m 6 casualties	Severe
8	Nil	22-30 Mar 1984	Tonga	40kt gust 53kt				Gale
9	Drena	11-14 Jan 1985	Ntt	50kt gust 70kt		20 miles W/ NTT	Houses, crops	Storm
10	Keli	8 – 12 Feb 1986	Tonga	50kt gust 70kt				Storm
11	Martin	10-14 Apr 1986	Ha'apai	40kt gust 60kt	995.5	Eye over Kia Is.	No major damage	Gale
12	Nil	7-14 Feb 1989	Tonga	35kt gust 50kt				Gale
13	Kerry	29Mar-3Apr 1989	Tonga	50kt gust 65kt				
14	Nil	14-17Dec 1990	Tonga	40kt gust 55kt				
15	Nil	7 Feb 1990	DO	DO				
17	'Ofa	30 Jan-7Feb 1990	Ntt	gust 140kts	974.1 at Ntt	30 miles W/Niue	T\$3.2m 70% houses, 1 death	Severe
18	Sina	24-30 Nov 1990	TBU/HP	65kt gust 100kt				Hurricane

19	Val	4-13 Dec 1991	NTT	50kt		Close to Savai'I	Vegetation	
20	Joni	6-13 Dec 1992	Tongatapu			Lau group	Vegetation	
21	Kina	26 Dec92-5 Jan 93	Tongatapu	gust120kt	971.5 at Nuk	Southern Lau	Communication , 3 casualties,	Severe
22	Nina	23Dec92-5 Jan 93	Nfo/Ntt/Vv				Vegetation	
23	Mick	5 - 9Feb 1993	Vv/Hp				Vegetation/buildings	Gale
24	Hina	12 -17Mar 1997	TBU/'Eua	50kt gust 90kt	996.5	W/Fua'amotu	Buildings and crops	Hurricane
25	Keli	10-15 Jun 1997	Nfo, Ntt	Gust100kt		300km E/Lakeba		
26	Ron	1-8 Jan 1998	Niuafonua	gust 125kt			buildings and crops	
27	Cora	25-26 Dec 1998	Tt/Hp/'Eua	47kt gust 73kt	972.4 at Fm	19 miles E/ TBU	T\$19.6 million	Storm/Gale
28	Mona	8-10 Mar 2000	Tt/Hp/'Eua	44kt gust 65kt	999 at Nuk	30 miles W/ TBU	T\$6 million	
29	Paula	1-3 Mar 2001	Tt/Hp/'Eua	40knots	992 at Nuk	200 miles SW of Tt	T\$630,000, resorts, W/Eua/TBU	
30	Waka	29Dec 01-1Jan 02	Nfo/NTT/VV	136knots	960 at VV	eye passed over VV	T\$104.2 million	Severe
31	Ami	14-15 Jan 2003	TT/EUA	40 knots	994 at TT Gust 60knots	120 miles SW of TT	MV Olovaha beached	Hurricane
32	Cilla	28 Jan 2003	Hp	28 knots	993 at Hp Gust 58 kns	eye passed over Lifuka	Vegetation	Storm
33	Eseta	13-14 March 03	TT/Hp	40 knots	n/a	eye passed 60 miles Gust 60 knots	Damaging swell south of TT damage Nafanua Warf and Good Samariatan inn 1.5 Million	Hurricane
34	Heta	5-6 Jan 2004	NFO/NTT	Est 80 knots	N/a	eye passed over NTT	Dozen houses damaged Vegetation and Crops	Hurricane

Storm Surge and Storm Wave

The report from Landcare Research New Zealand states that there are few comprehensive records of coastal inundation events in Tonga, but many low-lying areas have a high exposure to inundation. The most severe inundation in living memory occurred during Cyclone Isaac in 1982 where a storm surge of about 1.6m acted on top of a high spring tide. It was estimated that approximately 30% of Tongatapu inundated (not all of this would have been by seawater - flooding due to heavy rainfall would also have inundated many areas).

The most severe inundation during a tropical cyclone occurred during Isaac in March 1982. On Tongatapu, the passage of the cyclone coincided with a high spring tide, which was about 1.39 m above Chart Datum (1990). The worst affected areas were at Sopu, localised areas to the west (e.g. Kolovai) and to the east of Manuka. The water level observed across the Vuna Road at Queen Salote wharf was about 0.5 to 0.75 m above the level of the road. All houses fronting the road were moved off their foundations a distance of about 10 m. Based on observed debris lines, the storm tide level reached approximately 3.05 m above Chart Datum resulting in a storm surge magnitude of about 1.66 m. At Manuka further west the storm surge was estimated at 1.5 m. In Sopu, water depths were up to 1.5 m but more generally about 1 m in low-lying property behind the coast road in Nuku'alofa. Inundation extended around 300 m inland, except at Sopu where it reached 1 km inland. On Ha'apai, the passage of the cyclone coincided with low tide, resulting in little inundation of coastal land.

Tornado/Severe Storm:

Do not appear to impact the Kingdom very often; however there have been recorded occurrences. A tornado on Tongatapu in 2004 affected four villages and inflicted several hundred thousand pa'anga in damage to homes, buildings and crops.

Flood/Water Inundation:

There have been no records obtainable on (rainfall instigated) floods but recent events have identified that many low-lying areas are subject to severe ponding of water when large rainfall occurs. These events flood homes and commercial buildings, and severely curtail transportation systems. The water usually dissipates within in 48 – 72 hours once the rain ceases.

While surface flooding may affect agriculture and some infrastructure it is not considered to pose high risks as the land mass is relatively small with subdued topography and the soils for the most part are relatively free-draining. Heavy rainfall is known to cause flooding, notably at Pea, Fanga, Halaleva and Manuka (Kula 2003).

Earthquake:

Tonga lies very close to the convergence of the Australian Tectonic Plate and the Pacific Tectonic Plate, one of the most seismically active areas in the Pacific.

The last two major earthquakes recorded (with a severe effect on the community) was on 23 June 1977 and 4 May, 2006. The tremor registered at 7.2 and 7.8 respectively on the Richter scale and impacted Tongatapu and Eua and Haapai. The first one caused damages to many buildings, Angaha Hospital, electricity and water supplies, cracks occurred in Queen Salote Wharf, Vuna Wharf and the yellow pier. There were only two injuries reported. The 2006 quake had its epicentre very close to Pangai, Haapai and caused a lot of structural damages to the Haapai hospital, the wharf and many private and church buildings. One injury was reported.

The Ministry of Lands Survey and Natural Resources operates a seismic recording station at Vaololoa, Tongatapu. Further stations are planned.

Table 18: Historical Large earthquakes (Magnitude 8 plus) in the Tonga region

Year	Month	Day	Time (UTC)	Latitude	Longitude	Depth (km)	Magnitude
1902	2	9	735	-20	-174	60	8
1903	1	4	507	-20	-175	400	8
1909	2	22	921	-18	-179	550	8
1913	6	26	457	-20	-174	60	8
1917	6	26	549	-15.5	-173	25	9
1919	1	1	259	-19.5	-176.5	180	8
1919	4	30	717	-19	-172.5	25	8
1937	4	16	301	-21.5	-177	400	8
1948	9	8	1509	-21	-174	25	8
1949	8	6	0	-20	-175	-	8
1949	8	6	35	-18.5	-174.5	70	8
1950	12	14	152	-19.2	-175.7	200	8
1956	5	23	2048	-15	-179	430	8
1956	1	10	0	-20	-175	-	8
1957	9	28	1420	-20.4	-178.5	549	8
1957	4	14	1918	-15.5	-173	60	8

Volcanic Eruption:

Tonga has a history of volcanic activity, recorded from 1839. There is an active volcano on the island of Niufo'ou. The last major eruption was in 1946, when the island was completely evacuated.

Table 22: Active volcanic centres and historically recorded volcanic activity, Tonga

Volcano	Year(s) of eruption	Effects/Consequences	
Curacao Reef	1873 ¹	Submarine volcano	
	1879 ¹		
Fonuafo'ou (Falcon Is)	1781? ^b	Island breaks ocean surface	
	1865 ^{1,4,5}		
	1877 ^b		
	1885 - 1886 ^{1,2,4,5}	100 m high cone recorded	
	1894 ^{1,b}	Eruption raised an island 15 m high and 11.5 km ² , w ^t disappeared by 1898	
	1921 ^b		
	1927 ^{1,3,5}	100 m high cone with 5 km diameter recorded	
	1928 ^b		
	1933 ^b		
	1936 ^b - 1937 ¹	Island formed, last seen 1941	
1970 ^{1,b}	Report of activity, possibly nearby		
Fonualei	1791 ^{1,b}	Numerous lava flows and much fumarole activity	
	1846-7 ^{1,4,5}		
	1900 ¹		
	1906 ^b		
	1939 ¹		
	1943 ¹		Minor eruption. Fumarole activity continuing since.
	1951 ^b		
	1957 ^b		
	1974? ^b		
	2001? ^b		Possible eruptions on Sep 27, 28, 30, 2001
Home Reef	1852 ^b		
	1857? ^b		
	1984 ¹	Island 30 m high, 1.5 km ²	
Hunga Group (Hunga Tonga & Hunga Ha'apai)	1911 ¹		
	1912 ^b		
	1937 ^{1,b}		
	1959? ¹	Underwater fumarole activity	
	1988 ^{1,5}	New Island formed for a short period	

Volcano	Year(s) of eruption	Effects/Consequences
Un-named Submarine Volcano	1911	
	1923	
	1998 - 1999	
Late	1790 ^{1,6}	
	1854 ^{1,6}	No eruptions reported since 1854 despite minor fumarole activity
Metis Shoal	1851 ^b	
	1852 ^b	
	1858 ^b	
	1859 ^{1,4,6}	Still active 1886?
	1894 ^b	
	1967-68 ^{1,d}	
	1979 ¹	
	1995 ¹	
Niufo'ou	1814 ^b	Killed half the inhabitants?
	1853 ^{4,5,6}	
	1867 ^{4,6}	
	1886 ^b	
	1887 ^b	
	1912 ^b	
	1929 ^{3,6}	Village of Futu destroyed, as well as other houses and plantations
	1935 ^{3,6}	No damage reported
	1936 ^{3,6}	Village of Petani destroyed
	1943 ^{3,6}	No damage reported
	1946 ^{3,6}	Extensive damage, to wireless station, and other government buildings, dwellings and plantations. Island population of 2500 evacuated
	1947? ⁶	
	1959? ⁶	
1985 ^b		
Tofua	1774 ^{1,6}	
	1792 ^{1,6}	
	1854 ^b	
	1885 ^b	
	1890 ¹	
	1906 ^{1,2,6}	
	1958 ^b	
	1959 ¹	

Tsunamis

Historical accounts show that some 20 tsunamis have affected many islands in Tonga. Most tsunami waves have been small (< 1 m) with little recorded damage. An earthquake in 1919, located close to Tonga, apparently caused tsunami waves of 2.5 m in the Ha'apai Group. Three tsunami waves caused by the 1977 earthquake were recorded. An estimation of the annual probability of tsunami waves for NZ and Tonga indicate that a 10 m run up related to a tsunami wave is approximately 1 chance in 500 for Tonga.

The probability of a 10 m tsunami wave affecting Tonga is about 10% chance in 50 years (475 year return period). However, given that much of the Tongan land mass is low lying and that most of the population live by the coast, Tonga is vulnerable to tsunami.

Table 21: Near-source Tsunami generating earthquake events that have affected Tonga

Year	Date	Max (m)	Damage ³	Cause ²	Source	Comment
1869	24 Dec			T	Tonga, Tongatapu Island	Report of earthquake on Tongatapu with changes in land level and flooding, at night on Christmas Eve
1886	17 Nov	2		T	Tonga Islands	Reached a height of 1 m at Tau near Tongatapu, sea flooded land and washed away everything in its path
1891	24 Nov			I	Tonga Islands	On Tongatapu, land subsided, but report does not mention tsunami
1891	Fri, 9 Aug	1.2	S	T	Tonga Islands	No information on extent of damage
1898	Wed, 1 Jan			V	Tonga Islands	Several km south of Tongatapu, a submarine eruption occurred which was accompanied by a strong earthquake and tsunami (year may be 1907)
1917	Tue, 26 Jun	12	L	T	Samoa Islands (TONGA ISLANDS)	
1917	Fri, 16 Nov			T	Kermadec Islands, vicinity	Reported from Apia for earthquake origin south of Tonga
1918	Wed, 30 Apr	2.5	S	T	Tonga Islands	Tsunami 2.5 m high on Ha'apai 0.6 hr after earthquake, no comments about tsunami damage, earthquake triggered landslides in Tonga and Samoa
1928	Tue, 16 Mar			M	Tonga Islands	1 person perished and all buildings washed away (except church) on Palmerston Is, considered to be most likely a storm-generated wave
1928	Fri, 18 May			V	Tonga, Ha'apai Island	An earthquake was felt. A tsunami appeared, and pumice was cast upon the shore
1948	Wed, 8 Sep	0.1	N	I	Tonga Islands	Small Pacific-wide tsunami recorded
1968	Tue, 7 Oct			V	Tonga Islands	
1969	Wed, 18 Dec			T	Tonga Islands	Strong swell reported in Tahiti
1969	Thu, 25 Jul	0.1		T	Kermadec Islands	0.1 m tsunami recorded in Suva from earthquake in Kermadec
1976	Fri, 28 Dec	0.76	N	T	Samoa Islands	No damage reported in Tonga
1977	Sat, 2 Apr	0.1	N	T	Tonga Trench: SAMOA ISLANDS	No damage reported in Tonga
1977	Wed, 22 Jun	0.3	N	T	Tonga Trench	No damage reported in Tonga
1977	Mon, 13 Oct	0.02	N	T	Tonga Trench	No damage reported in Tonga

Year	Date	Hmax (m)	Damage ¹	Cause ²	Source	Comment
1982	Sun, 19 Dec	0.2	N	T	Kermadec I., South of Tonga Is.	No damage reported in Tonga
1986	Mon, 20 Oct	0.2	N	T	Kermadec Islands: Raoul Is	No damage reported in Tonga
1987	Tue, 8 Oct	0.1	N	T	Tonga Islands	No damage reported in Tonga
1995	Fri, 7 Apr	0.1	N	T	Tonga, Samoa Islands	No damage reported in Tonga
1997	Tue, 14 Oct		N	T	Tonga Islands	No damage reported in Tonga

¹Damage: N = non-damaging event, S = slight damage, M = moderate damage, L = large (severe) damage).

²Cause: T= tectonic, V = volcanic, M = meteorological

Transportation Event:

There have been several marine incidents over the years, with multiple loss of life. The international airport services aircraft up to and including Boeing 737-800, and there are regular international and domestic flights. Any serious incident involving either international or domestic aircraft would severely stretch the Kingdom's capacity to respond within its own resources.

Hazardous Material Event:

The bulk fuel depots and high pressure gas transport ships are the source of the biggest hazardous material threat in Tonga. There is no record of any major incident in Tonga resulting from either petroleum or gas products.

Human Disease/Epidemic:

The Ministry Of Health staff advised that there were six deaths from Dengue Fever in 2003 and 38 cases of typhoid previously recorded.

Oil Spill at Sea

This is a matter adequately addressed by other arrangements. The consequences of an oil spill at sea may require support from the emergency management system, and will be addressed using the concept of the "All Hazards Approach" to emergency management.

Terrorist Activity

While this has been included as a hazard for the purposes of this Plan, it is not addressed with a view to its mitigation, but purely as to its consequences. The consequences of a terrorist event will be similar to the consequences of many other events outlined in this document, and will be addressed using the concept of the "All Hazards Approach" to emergency management.

PART A

DISASTER RISK REDUCTION

Purposes

1. The purposes of this Part of the National Emergency Management Plan are to:
 - a. establish an institutional strategy and program for reducing risks to national sustainable development, sustainable living, poverty alleviation and sound environmental management within the Kingdom of Tonga using the CHARM process and
 - b. integrate *disaster risk reduction* into that strategy and program.

Section 1: National Risk Reduction Strategy and Program

National Risk Reduction Strategy

2. The National Risk Reduction Strategy of the Kingdom of Tonga is that formal processes of *risk management* and *risk reduction* are to be applied in all aspects of Government Agency planning and operations.

National Risk Reduction Program

3. The National Risk Reduction Program is based upon the ‘Comprehensive Hazard and Risk Management (CHARM)’ tool developed by the South Pacific Applied Geoscience Commission (SOPAC) and accepted by the Kingdom of Tonga. CHARM has been developed from an internationally-recognised risk management model to facilitate the integration of risk management practices within the national development planning processes of Pacific Island Countries.

Implementing the Strategy and Program

4. The introduction of the National Risk Reduction Strategy and Program requires the establishment of institutional arrangements within the Ministries to manage their development and implementation.
5. The development and implementation of the Kingdom of Tonga National Risk Reduction Strategy and Program.

Section 2: Developing and Implementing the National Risk Reduction Program

The National Risk Reduction Process

6. Includes instituting a program for developing a national risk reduction philosophy and awareness of 'risk' at senior officer levels in all government departments and agencies. As part of this program, those agencies with primary responsibility for the management of risks to national sustainable development, sustainable living, poverty alleviation and sound environmental management within the Kingdom of Tonga need to be identified.
7. The National Emergency Management Office is to establish a group to include senior members of those agencies, under a working group attached to the National Emergency Management Committee.
8. This group is to develop for Cabinet approval, the proposed National Risk Reduction Strategy and Program, to include as appropriate, the necessary information required for implementation of the strategy and
9. The group is also required to develop proposals for communicating the strategy and program. The group is also responsible for the ongoing monitoring and review of the strategy and program and for making regular reports to the NEMC on national risk reduction progress and issues.

Developing the National Risk Reduction Program

10. The National Risk Reduction Program is based upon the 'Comprehensive Hazard and Risk Management (CHARM)' tool developed by the South Pacific Applied Geoscience Commission (SOPAC).
11. Notes on the development of the National Risk Reduction Program employing CHARM are included in this Part.

Implementing the Program at National, District and Village Levels

12. Guidance on the implementation of the National Risk Reduction Program at National, District and Village levels is included in this Part.

- a. At national level the **National Risk Reduction Group**, in consultation with the **National Emergency Management Committee** in relation to disaster risk reduction issues, is responsible for the implementation of the program and for monitoring and reviewing its progress and regular reporting to Cabinet.
- b. At District and Village levels the following are responsible for the implementation of the program and for its ongoing monitoring and review:
 - i. at District level, the **District Emergency Management Committee**, reporting regularly to the National Emergency Management Committee, and
 - ii. at village level, the **Village Emergency Committee**, reporting regularly to its District Emergency Management Committee.

Section 3: Integrating Disaster Risk Reduction into the National Risk Reduction Strategy and Program

The Disaster Risk Reduction/National Risk Reduction Relationship

13. There are two components of *disaster risk management*, as shown:

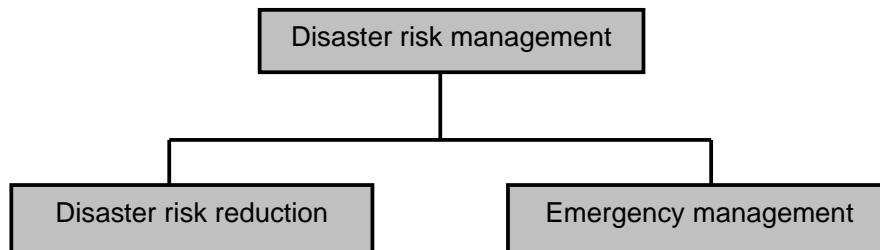


Figure A2 Disaster risk management

Disaster risk management refers to ‘all forms of activities, including structural and non-structural measures, to avoid (prevention) or to limit (mitigation and preparedness)’ to ‘lessen the impacts of natural hazards and related environmental and technological disasters’.

Disaster risk reduction refers to ‘minimizing vulnerabilities and disaster risks (to lessen) the adverse impacts of hazards within the broad context of sustainable development’.

Emergency management refers to ‘the organization and management of resources and responsibilities for dealing with all aspects of emergencies/disasters, in particular preparedness, response and (relief/rehabilitation)’.

(Above definitions from the UNISDR publication ‘*Living with Risk*’, 2004, Terminology: Basic terms of disaster risk reduction)

14. Within the Kingdom of Tonga, the National Emergency Management Office has specific responsibility for emergency management. In the performance of its emergency management role and tasks, however, it needs to be informed by:
- a. the outcomes of risk management assessments of risks from ‘natural hazards and related environmental and technological disasters’ which will allow the NEMO to develop programs for ‘minimizing vulnerabilities and disaster risks to lessen the adverse impacts of hazards within the broad context of sustainable development’ and
 - b. national risk reduction strategy, and the implementation of national risk reduction programs, to allow the NEMO to address potential disaster risks which are unable to be avoided or satisfactorily mitigated through such national risk reduction programmes.

Section 4: STEPS IN DEVELOPING AND IMPLEMENTING THE KINGDOM OF TONGA NATIONAL RISK REDUCTION PROGRAM

Step 1: Support of national government

Develop a national risk reduction philosophy and awareness of 'risk' at senior officer levels in all government departments and agencies. This is facilitated through training, education and briefing of senior management.

- The active ongoing support of Cabinet is necessary.
- A senior minister or similar 'champion' and a Group need to sponsor the initiative.
- All senior officers shall give full support.

Step 2: Develop the National Program

Develop and document the National Risk Reduction Program integrated with relevant national sustainable development, sustainable living, poverty alleviation, and sound environmental management policies and programs. This program should be endorsed by the NEMC and implemented throughout all levels of government. The strategy for implementation may include information such as:

- the objectives of the program and the rationale for managing risk;
- the links between the program, government objectives and other relevant policies;
- the guidance on what may be regarded as acceptable risk;
- who is responsible for managing risks;
- the support/expertise available to assist those responsible for managing risks;
- the extent to which donors, non-government and civil society agencies can contribute to program development and implementation;
- the level of program documentation required; and
- the plan for reviewing program performance.

Step 3: Communicate the Policy, Strategy and Program

Develop, establish and implement an infrastructure to ensure that managing risk becomes an integral part of the planning, management processes and the general culture of the nation. This may include:

- establishing, under appropriate ministerial direction, a process for internal and external communications about the program;
- raising awareness about managing risks;
- communication/dialogue throughout the public and private sectors and with donors and non-government organizations about managing risk and the national policy;
- acquiring risk management skills, e.g. consultants, and developing the skills of staff through education and training;
- ensuring appropriate levels of recognition, rewards and sanctions; and establishing performance management processes.

Step 4: Manage risks at national level

Develop and implement a program for managing risks at national level through the application of the risk management system. The process for managing risks should be integrated with the national strategic planning and management processes. This will involve documenting:

- the national strategic, organizational and risk management context;
- the risks identified for the nation;
- the analysis and evaluation of these risks;
- the treatment strategies;
- the mechanisms to review the program; and
- the strategies for awareness raising, skills acquisition, training and education.

Step 5: Manage risks at District and Village levels

Develop and implement a program to manage the risks for each District area and Village activity through the application of the risk management process outlined in '**Regional Comprehensive Hazard and Risk Management (CHARM) – Guidelines for Pacific Island Countries**' (SOPAC, 2002) . The process for managing risks should be integrated with other planning and management activities. The process followed, the decisions taken, and the actions planned, should be documented.

Step 6: Monitor and review

Develop and apply mechanisms to ensure ongoing review of the risks at national, District and Village levels. This will ensure that the risk management program and its implementation remain relevant, as circumstances change over time and review of previous decisions is vital. The effectiveness of the risk management process itself should also be monitored and reviewed.

Section 5: NOTES ON THE DEVELOPMENT OF THE NATIONAL RISK REDUCTION PROGRAM EMPLOYING 'CHARM'

An Overview of the CHARM Model

1. An overview of the CHARM model and a summary of its attributes are attached.

Organizational Arrangements for Introducing CHARM

2. At a meeting of the **National Emergency Management Committee**, the committee is to designate a **National Risk Reduction Working Group** composed of designated senior members of all the agencies represented on the Committee, including the NEMO. Working Group members should be agency representatives with responsibility for hazard/risk management within that agency.
3. The role of the National Risk Reduction Working Group is to:
 - a. develop for the National Emergency Management Committee a draft National Risk Reduction Program, employing the CHARM model, for the Committee's consideration and subsequently
 - b. provide continuing support to the Committee, in particular by monitoring and reviewing the implementation of the National Risk Reduction Program.
4. After its development of the draft national risk reduction program and the implementation of the initial program, the National Risk Reduction Working Group is to meet regularly (and at least once each quarter) to undertake its monitoring, review and NEMC support tasks.

Critical Points in the Application of the CHARM Process

5. The CHARM Guidelines provides a general guide to the application of the CHARM process at national, district and village levels.
6. For its employment in the development of the National Risk Reduction Program by the National Risk Reduction Working Group, however, there are a number of critical points which need to be noted

- a. **Step 1. Establish the context**

This component contains an element ‘Develop draft risk evaluation criteria’, and the importance of these is that they set the parameters under which risks are evaluated in Step 4. Evaluate risks in order to determine whether each risk is either ‘accepted’ (then simply monitored against the criteria in future) or ‘not accepted’ (then actively included in the risk reduction program). The CHARM publication indicates a number of factors which should be considered and gives examples of appropriate criteria.

- b. **Step 4. Evaluate risks**

needs to be undertaken in a special workshop or ‘brainstorming session’ of the Working Group to evaluate each risk against the agreed risk evaluation criteria to propose which risks should be ‘accepted’ (referred for subsequent monitoring) and ‘not accepted’ (proposed for inclusion in the risk reduction program) and to develop a prioritized (ranked) list of the ‘not accepted’ risks for treatment.

The final decision on which risks shall be evaluated as ‘acceptable’ or ‘unacceptable’ is so important that it needs to be undertaken by the National Emergency Management Committee, which will also need to determine the priority for the treatment of ‘unacceptable’ risks in terms of Committee members’ knowledge of governmental and agency policies, programs and projects related to national development and sustainability. The Committee itself may need to refer particular issues for higher level consideration prior to agreeing to the Working Group’s recommendations.

c. **Step 6. Reduce risks (Prevention/mitigation strategies)**

The actions to be taken to reduce those national risks determined as 'unacceptable' can be summarised as:

- Identify prevention/mitigation options
- Evaluate prevention/mitigation options
- Select prevention/mitigation options
- Plan & implement risk reduction program

A detailed diagram of the risk prevention/mitigation process is shown. It is based on the recognition that the primary options in risk prevention/mitigation are

- i. reducing the likelihood of a risk event occurring (e.g. through hazard management);
- ii. reducing the consequence of a risk event occurring (e.g. by increasing resilience or reducing vulnerability);
- iii. transferring the risk in full or in part (e.g. through insurance, partnerships, joint ventures etc.), and
- iv. avoiding the risk (e.g. by deciding not to proceed with an activity likely to generate the risk).

The diagram demonstrates that there may still be a degree of risk present no matter what risk reduction option or combination of options has been adopted ('residual risks'). In addition, risk reduction programs and plans approved and implemented as an outcome of the process will need to be monitored and reviewed, and may result in additional or resultant risks being identified.

d. **Step 7. Manage residual risk**

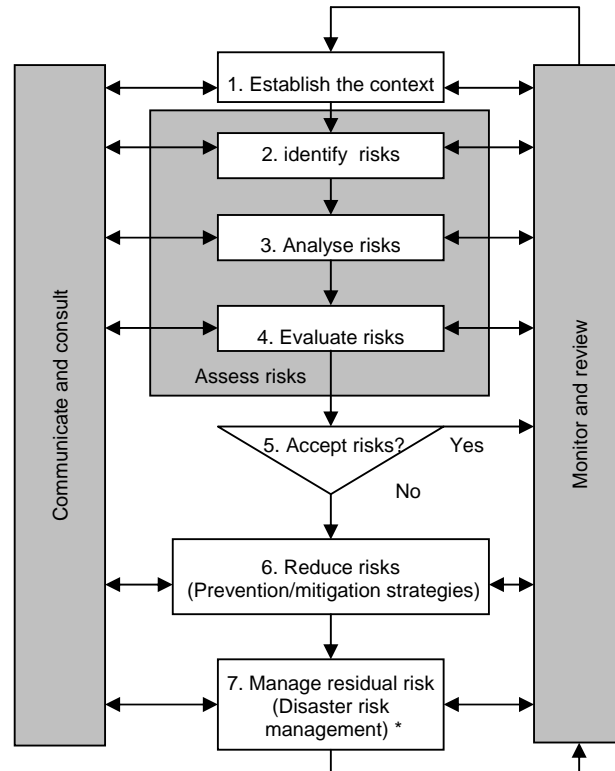
'Residual risks' and any additional or resultant risks identified in the course of the ongoing monitoring and review process need to be referred to the National Emergency Management Office for consideration as to whether existing or general emergency management programs (covering preparedness, response and relief activities) will address such risks, or whether a particular emergency management sub-plan needs to be developed.

7. Documentation. A number of forms and pro forma which may be used in the documentation of the risk reduction process are available in the CHARM Guidelines and CHARM Manuals or in other source material such as the Australian/New Zealand Risk Management Standard (AS/NZS 4360:1999/2004)
8. Communicate and consult, monitor and review. General guidance in undertaking these over-arching processes is contained in the reference document.

Section 6

AN OVERVIEW OF THE CHARM RISK MANAGEMENT PROCESS

In overview, the CHARM risk management process consists of the following steps:



* Including the emergency management treatments of

- a. Developing preparedness and response plans
- b. Managing response and immediate relief

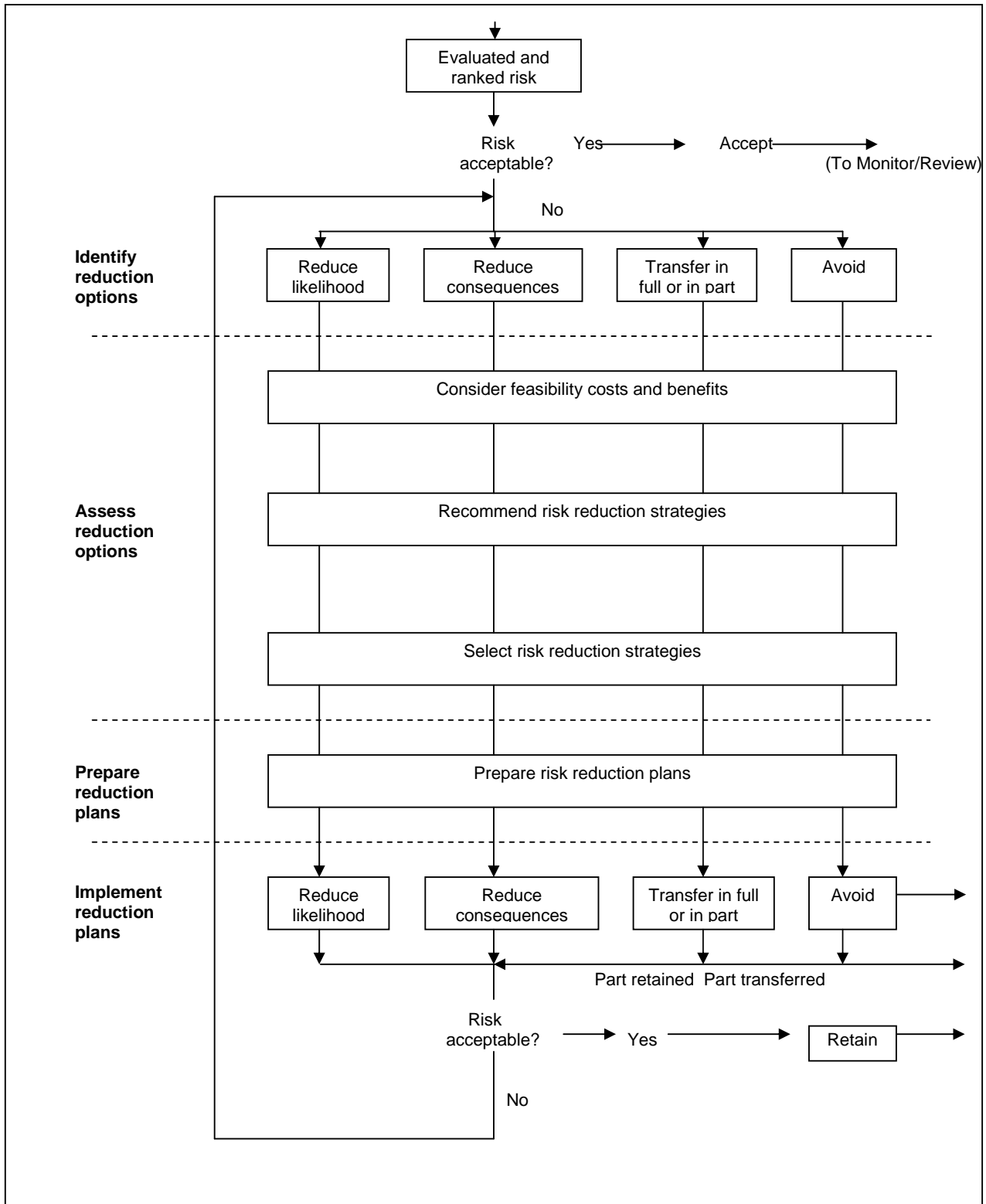
Figure 1 CHARM Risk Management Process Overview

15. The particular attributes of CHARM as a risk management tool when applied as part of a national risk reduction strategy are that:

- It is linked to national development planning (social, economic and infrastructure).
- It assists in establishing and prioritising development activities.
- It targets the management of both existing and future risk.
- It facilitates collaborative partnerships and enhances information sharing.
- It creates a programming environment that maximises the use of available resources and minimises duplication.
- It provides a mechanism for establishing formal linkages between all stakeholders.
- It creates an environment for enhanced collaboration at national and regional levels.

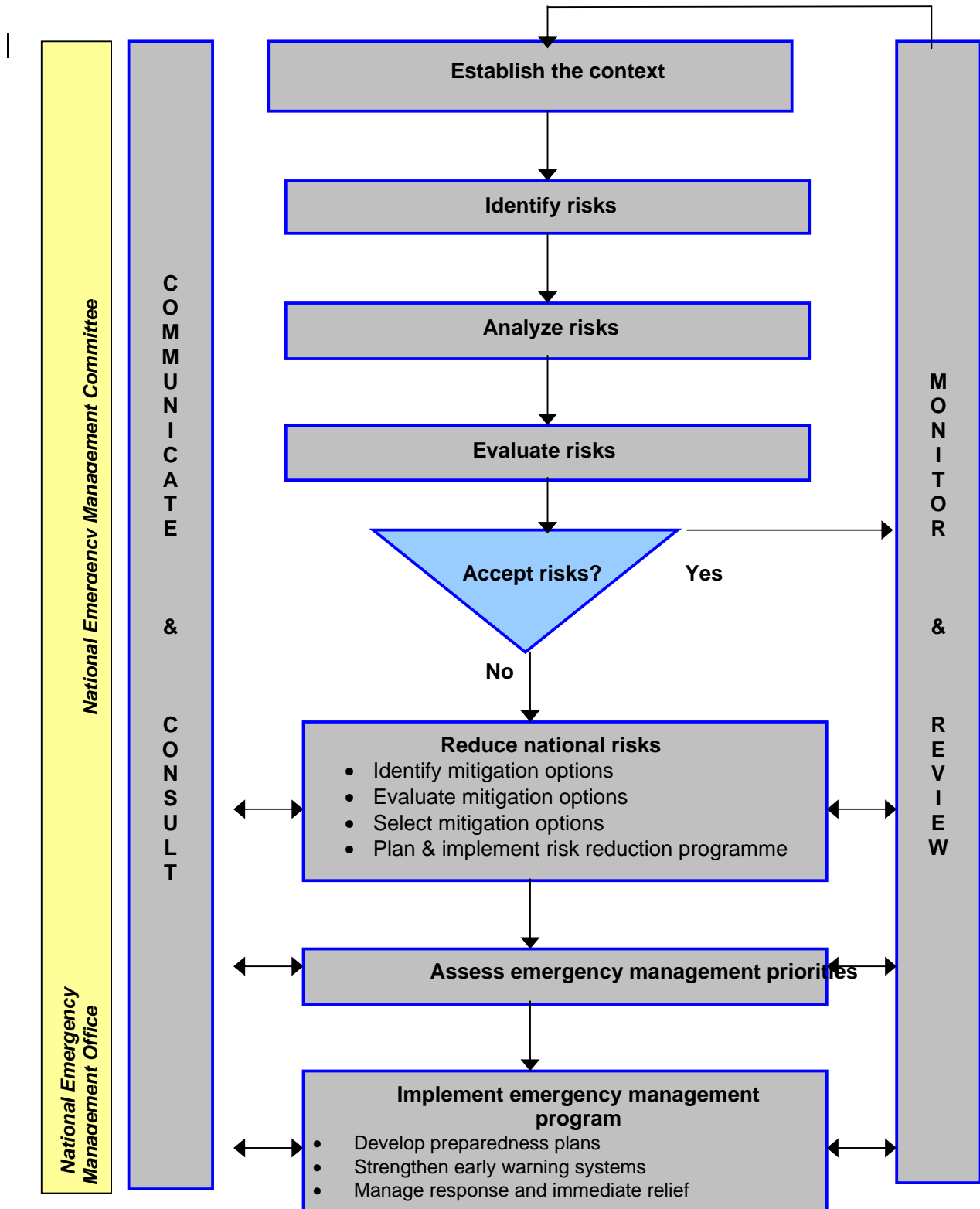
Section 7

THE 'REDUCE RISK' STEPS – A MORE DETAILED DIAGRAM



Section 8

KINGDOM OF TONGA - RISK REDUCTION AND EMERGENCY MANAGEMENT PROCESS



Part B

Emergency Management

Introduction

This part of the plan replaces the existing 'National Disaster Plan and Emergency Procedures (1999)' and all preceding plans, and will establish comprehensive, integrated and whole-of-government institutional practices within the Kingdom of Tonga for undertaking emergency management activities.

Essentially, such activities are required to monitor and address risks which have been unable to be addressed or have been insufficiently addressed within existing or planned programmes or activities for the reduction of risks, as detailed in Part A - Disaster Risk Reduction, of this plan, and which are evaluated as having the potential to create an emergency.

Resulting preparedness, response and relief arrangements are also required to be flexible enough to cope with emergency situations which may arise from unexpected and/or unanticipated hazards that may not be addressed in the Preparation and Preparedness part of the plan.

It is for this reason that the document utilises an '*All Hazards*' or '*Functional*' approach to emergency management, where the focus is on the emergency support function to be performed, rather than the specific hazard being prepared for or responded to.

Activation of the Emergency Management System

National Emergency Management Office – Duty Officer

As the lead agency for the co-ordination of the emergency management system in the Kingdom, the National Emergency Management Office has a responsibility to provide a 24 hour, 7 day response capacity.

Accordingly, staff from the National Emergency Management Office will provide a ‘Duty Officer’ service, whereby a member of staff will be rotated “on call” for a period to be determined by the Director.

The staff member on call will be required to be available to respond to any event immediately, and shall be provided with the Duty Officer mobile telephone and contact lists, and the National Emergency Management Office vehicle.

**The full operational activation of the Emergency Management System
will be initiated in accordance with the provisions of the
“National Emergency Response Procedures”,
included as an annex to this document.**

The Emergency Management System in Operation

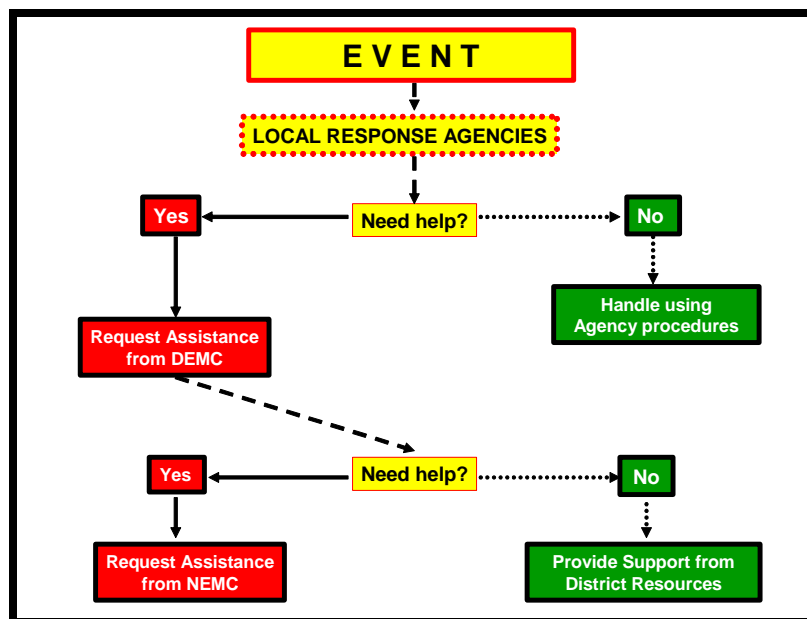
Assistance to Responding Agencies

Should the operational event be one which can be readily dealt with by the responding agencies, using the resources normally available to them, then there will be no necessity to activate the emergency management system operationally.

Activation of the emergency management system can occur when there is a need for:

- monitoring of potential threats or response operations;
- coordination of support to response operations being conducted by a response agency;
- coordination of resources in support of emergency response and recovery operations.

The emergency management system is designed in order that support can be provided from the lowest possible level. If the responding agencies need resource assistance, the emergency management system will provide it. A request from the lead responding agency will be made to the National Emergency Operations Centre (NEOC).

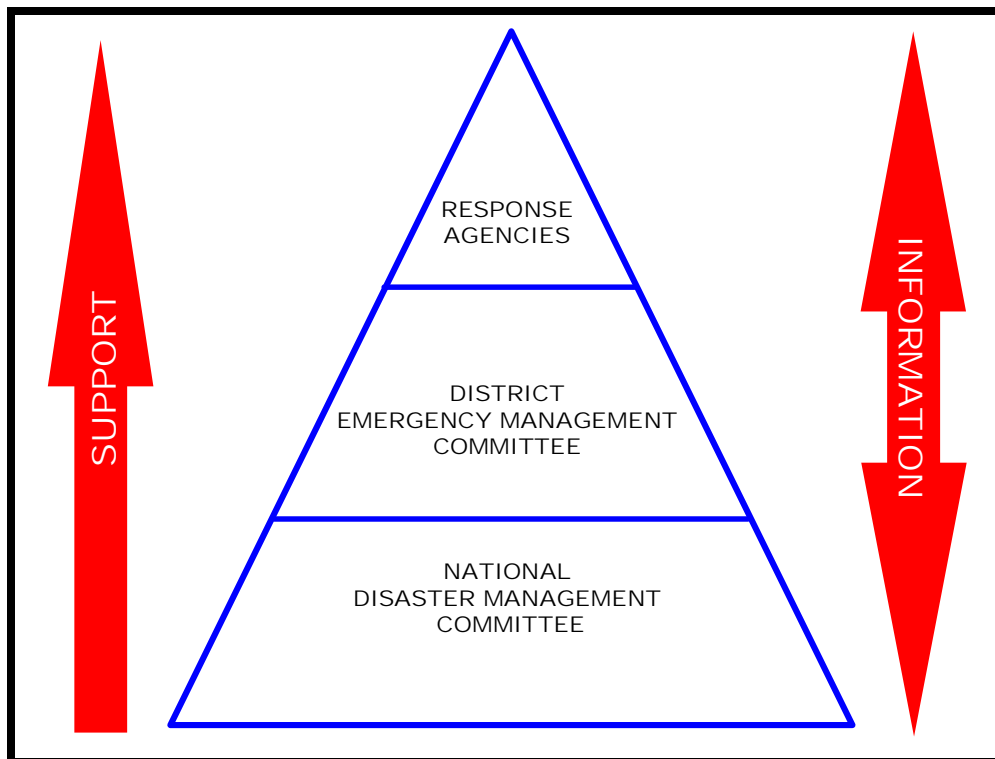


Information and Support

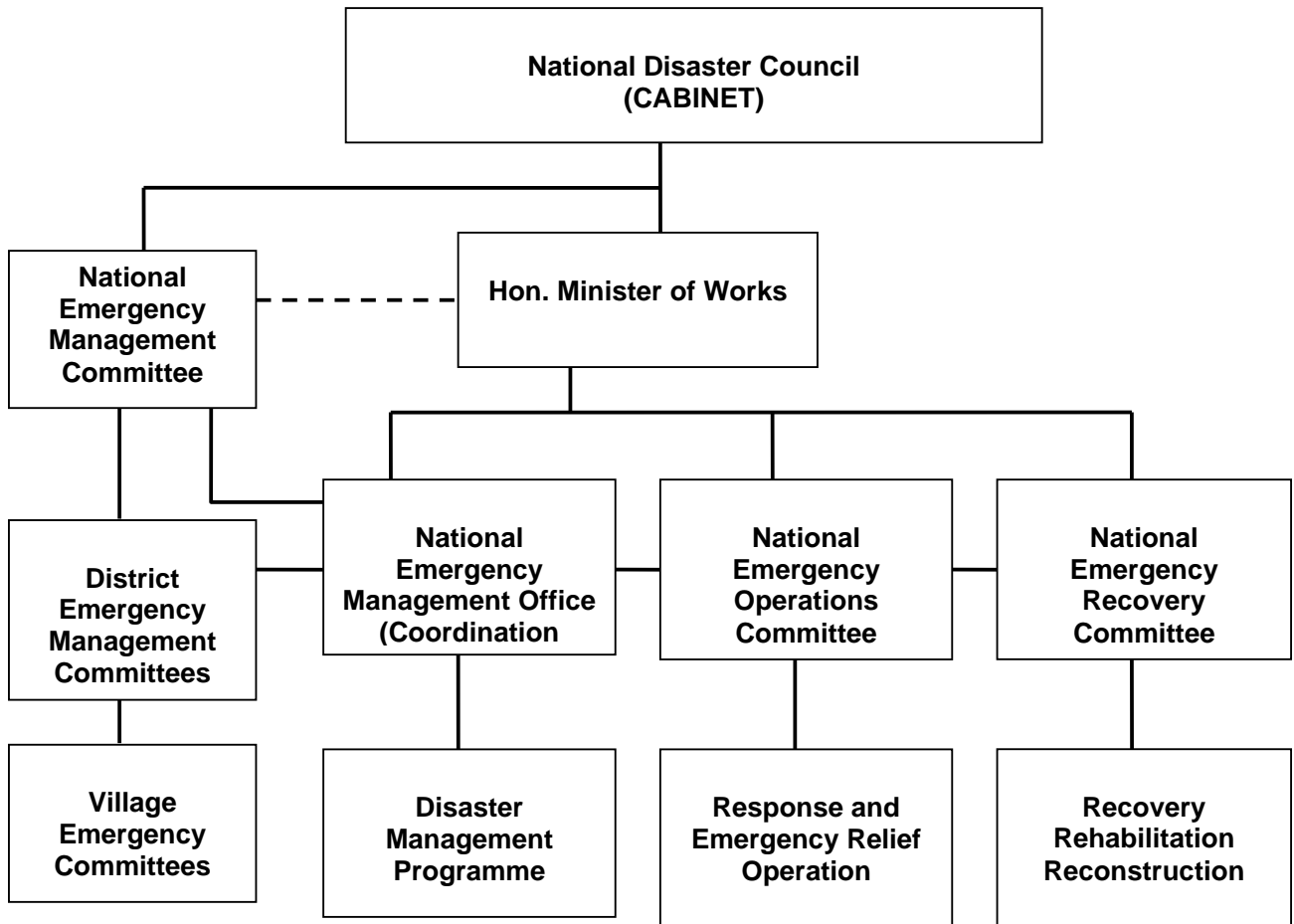
This graphic depicts the support function of the emergency management system, and also the linkages from the responding agencies in the field to the National Emergency Operations Centre.

The graphic depicts “**support**” as being one-way – to the responding agencies.

It also depicts “**information**” as being a two-way process.



The Structure of Emergency Management in Tonga



Operational Roles of the Committees

Operational functions of National Emergency Management Committee

- to make policy decisions of national significance relating to emergency management for the Kingdom;
- to have in place arrangements with other nations and relevant bodies to provide support to the Kingdom during major emergencies;
- to provide support to District Emergency Management Committees; and
- to ensure effective emergency management and emergency response in communities before, during and after the impact of an event.

Operational functions of National Emergency Recovery Committee

- to coordinate the recovery phase following any event that may Impact on the Kingdom of Tonga;
- carry out damage assessments in partnership with the District Emergency Management Committees;
- coordinate the provision of emergency relief to those areas that have been affected by an event;
- coordinate all recovery and rehabilitation works that are carried out in the affected area.

Operational functions of the National Emergency Operations Committee

- activate departments and organisations in response to an event that may happen, is happening or about to happen;
- liaise with and guide departments, non government organisations and community groups in the execution of their emergency management roles and responsibilities;
- activate disaster assessment systems;
- collate and prioritise disaster relief requirements; and
- manage the distribution of immediate relief supplies.

Operational functions of District Emergency Management Committees

- to provide support to communities to ensure effective emergency management in communities before, during and after the impact of an event;
- to ensure community awareness of emergency management, including ways of mitigating, preparing for, responding to and recovering from an emergency;
- to identify and coordinate the use of resources for emergency operations in the district;
- to manage emergency operations in the district in accordance with any policies and procedures issued by the National Emergency Management Committee;
- to establish and review communications systems in the district for use when an event threatens or an emergency happens; and
- to ensure information about an event or an emergency in the district is promptly provided to the National Emergency Management Committee.

Operational functions of Village Emergency Committee

- to provide support to communities to ensure effective emergency management in communities before, during and after the impact of an event;
- to ensure community awareness of emergency management, including ways of mitigating, preparing for, responding to and recovering from an emergency;
- to identify and coordinate the use of resources for emergency operations in the village;
- to manage emergency operations in the village in accordance with any policies and procedures issued by the National Emergency Management Committee;
- to establish and review communications systems in the village for use when an event threatens or an emergency happens; and
- to ensure information about an event or an emergency in the village is promptly provided to the District Emergency Management Committee.

Individual Agency Business Continuity and Emergency Response Plans

It is the responsibility of individual agencies to develop and maintain their individual Business Continuity and Emergency Response Plans.

Copies of individual agency Emergency Response Plans (along with any amendments made from time to time) are required to be submitted to the National Emergency Management Office for ratification, and are to be maintained as annexes to the National Emergency Management Plan.

Threat Specific Plans

National Oil Spill Response Plan

The Ministry of Marine and Ports maintains a National Oil Spill Response Plan, which is linked to international planning arrangements, to deal with the response to an oil spill at sea.

The Ministry operates independently of the national emergency management system in relation to oil spills, but the national emergency management system will provide support as required to the Ministry's efforts, utilising the functional, or all hazards approach to emergency management.

Airport Emergency Plans

The Ministry of Civil Aviation/Transport maintains Emergency Orders for all airports in the Kingdom, to deal with various aviation and other emergency situations at or near airports.

The Ministry operates independently of the national emergency management system in relation to aviation incidents, but the national emergency management system will provide support as required to the Ministry's efforts, utilising the functional, or all hazards approach to emergency management.

Capabilities, Roles and Responsibilities of Agencies involved in Emergency Management

Agency	Capabilities, Roles & Responsibilities
National Emergency Management Office	<ul style="list-style-type: none"> ▪ Maintenance of the operational functioning of the National Emergency Management System ▪ Development and maintenance of the National Emergency Management Strategies and the National Emergency Management Plan - Part 2: Emergency Management ▪ Facilitation of a comprehensive approach to emergency management ▪ Maintenance and operation of a National Emergency Co-ordination Centre, including the training of sufficient personnel to operate the Centre ▪ Provision of a 24/7 point of contact for emergency management matters ▪ Co-ordination of support to response agencies ▪ Co-ordination of reconnaissance and post-impact assessment ▪ Issuing of public information prior to, during and following emergency event impacts ▪ Design and maintenance of a locally-based public education/awareness program, including multi-lingual information as appropriate ▪ Membership of and provision of secretariat support to the National Emergency Management Committee
Ministry of Works	<ul style="list-style-type: none"> ▪ Clearing of roads to enable access to affected areas ▪ Maintenance of a transport resource register for the Kingdom ▪ Leading the emergency impact assessment process and compilation of a full assessment report for the National Emergency Management Committee and Cabinet ▪ Provision of a representative to the National and District Emergency Management Committees
Ministry of Lands, Survey and Natural Resources	<ul style="list-style-type: none"> ▪ Provision of geo-technical information in relation to hazards and vulnerability ▪ Provision of GIS (Geographic Information System) mapping ▪ Provision of seismic information and warnings ▪ Contribute to post-impact assessment processes ▪ Provision of a representative to the District Emergency Management Committees
Tonga Water	

Board	<ul style="list-style-type: none"> ▪ Provide and maintain reticulated water supply as installed ▪ Provide advice and assistance in relation to water provision in emergency affected areas
Tonga Police Force	<ul style="list-style-type: none"> ▪ Preservation of peace and good order during emergencies ▪ Prevention of crime during emergencies and at affected communities ▪ Maintenance of any site as a possible crime scene ▪ Coronial investigation procedures ▪ Traffic control, including assistance with road closures and maintenance of road blocks ▪ Crowd control ▪ Co-ordination of rescue ▪ Co-ordination of evacuation ▪ Patrols of evacuated areas ▪ Tracing, or co-ordination of search for, missing members of the community ▪ Contribute to post-impact assessment processes ▪ Provision of a representative to the National and District Emergency Management Committees
Tonga Fire Service	<ul style="list-style-type: none"> ▪ Fire control ▪ Fire prevention ▪ General Rescue ▪ Management of hazardous material situations ▪ Provision of Material Safety Data Sheet information relative to hazardous materials ▪ Advice relative to evacuation requirements as a result of a hazardous material incident ▪ Contribute to post-impact assessment processes
Ministry of Health	<ul style="list-style-type: none"> ▪ Co-ordination of medical resources during emergencies.

	<ul style="list-style-type: none"> ▪ Provision and maintenance of hospital and clinic facilities ▪ Appropriate pre-hospital on-site medical and health response management for casualties ▪ Public health advice and warnings to participating agencies and the community ▪ Health education programs ▪ Immunisation programs ▪ Epidemiology/disease surveillance ▪ Collection/dissemination of health information ▪ Food and water testing capability ▪ Psychological and counselling services for Emergency affected persons ▪ On going medical and health services required during the recovery period to preserve the general health of the community ▪ Provision of a representative to the National and District Emergency Management Committees
Ministry of Education	<ul style="list-style-type: none"> ▪ Provision of schools for temporary shelter as required ▪ Promotion of Community Emergency Awareness and Preparedness through subject inclusion in curriculum ▪ Contribute to post-impact assessment processes regarding damage to school buildings ▪ Provision of a representative to the National and District Emergency Management Committees
Ministry of Marine and Ports	<ul style="list-style-type: none"> ▪ Assist in search and rescue operation ▪ Maintenance of port areas to ensure minimal disruption to operations resulting from any emergency event. ▪ Contribute to post-impact assessment processes
Ministry of	<ul style="list-style-type: none"> ▪ Lead Agency role relative to any outbreak of emergency animal or plant disease

Agriculture, Forestry and Food	<ul style="list-style-type: none"> ▪ Control/containment of emergency animal diseases ▪ Provision of temporary animal enclosures ▪ Advice relative to stock matters ▪ Destruction of stock or plants as required ▪ Contribute to post-impact assessment processes ▪ Advice to farmers relative to disaster recovery processes ▪ Advice to farmers relative to crop protection ▪ Link with FAO re immediate aid ▪ Support Community Disaster Awareness and Preparedness Program through agricultural extension officers ▪ Provision of a representative to the National and District Emergency Management Committees
Tonga Defence Services	<ul style="list-style-type: none"> ▪ Provision of HF Radio network as alternative back-up resource ▪ Provision and maintenance of operations room facilities as an alternative National Emergency Co-ordination Centre ▪ Provide air support to initial impact assessment ▪ Support relief distribution ▪ Support search and rescue operations ▪ Provision of a representative to the National and District Emergency Management Committees
District and Town Officers	<ul style="list-style-type: none"> ▪ Manage the Community Emergency Awareness and Preparedness program on behalf of the community ▪ Disseminate warning messages within the community and ensure community members understand their meaning together with action to take ▪ Initiate initial impact assessment within their community ▪ Serve as the emergency management link between the community and the District/National Emergency Management Committees and the Government Representatives on the Niua and Eua
Tonga Red Cross	<ul style="list-style-type: none"> ▪ Assist in public awareness campaign and Emergency management training activities through national headquarters and branch officials

	<ul style="list-style-type: none"> ▪ Contribute to post-impact assessment processes ▪ Provision of relief supplies, emergency shelter, and first aid service for disaster affected people as appropriate, in co-ordination with Emergency Management Tonga ▪ Seek assistance from the International Federation of Red Cross and Red Crescent Societies for international relief when required ▪ Ensure adequate supply of blood is available at the Tonga Blood Bank, Vaiola Hospital ▪ Assist in tracing of missing persons ▪ Provision of a representative to the National Emergency Relief Committee and the District Emergency Management Committees
<p>Ministry of Civil Aviation/Tra nsport</p>	<ul style="list-style-type: none"> ▪ Maintenance of all airports within the Kingdom ▪ Provision of operational airports for use as required in emergency response and recovery operations ▪ Provision of air traffic co-ordination services to facilitate extra traffic which may be expected during emergency response and recovery operations
<p>Ministry of Civil Aviation (Tonga Meteorologic al Service)</p>	<ul style="list-style-type: none"> ▪ Provision of public weather forecasting service ▪ Provision of meteorological and related environmental services in support of national emergency management requirements ▪ Provision of Special Weather Bulletins in relation to severe weather events ▪ Provide 24hrs service for weather and tsunami warnings. ▪ Assist NEMO with public awareness raising and advice on weather related issues
<p>Ministry of Foreign Affairs</p>	<ul style="list-style-type: none"> ▪ Provide the link between the National Emergency Management Committee and the Diplomatic Corps in Tonga ▪ Co-ordinate the Kingdom's external relations, and liaise with overseas countries/agencies on aid issues ▪ Provision of a representative to the National Emergency Management Committees

Customs and Quarantine	<ul style="list-style-type: none"> ▪ Establish procedures for the clearance of personnel, vessels, aircraft and goods during emergency relief operations ▪ Develop and enforce procedures to expedite clearance of emergency relief supplies and for reconstruction and rehabilitation purposes
Ministry of Finance and Planning	<ul style="list-style-type: none"> ▪ Management of the financial aspects of relief operations including the recording of donor contributions ▪ Preparation of a financial record of expenditure following major operations ▪ Provision of a representative to the National Emergency Management Committee ▪ Assistance in the co-ordination of the recovery and reconstruction process ▪ Provision of a representative to the National Emergency Management Committees
Tonga Power	<ul style="list-style-type: none"> ▪ Maintenance of electrical power supply ▪ Advice Government on power related issues during emergencies
Tonga Communications Corporation (TCC)	<ul style="list-style-type: none"> ▪ Maintenance of a national telecommunication capacity, including land-line, mobile telephone, satellite telephone and internet services ▪ Advice Government on capacity status during emergencies
Tonga Broadcasting Corporation	<ul style="list-style-type: none"> ▪ Provision of emergency related public information as advised by NEMO ▪ Broadcast of Special Weather Bulletins and other information in conjunction with the Tonga Meteorological Service.

Operational Lead Agencies

Co-ordination of emergency operations

The under mentioned organisations have agreed to assume the Lead Agency coordinating role for the operational response to the following threat situations.

It is stressed that the role is one of co-ordination and not control.

<u>Event</u>	<u>Coordinating Agency</u>
Emergency Animal or Plant Disease	Ministry of Agriculture, Forestry and Food
Fire	Tonga Fire Service
Cyclone/Storm/Flood/Landslip/Earthquake/Volcanic Eruption/Tsunami	National Emergency Management Office (on behalf of the National Emergency Management Committee)
Hazardous Material Event	Tonga Fire Service
Human Epidemic	Ministry of Health
Major Infrastructure Failure	<u>Power:</u> Tonga Electrical Power Board <u>Communications:</u> Communications Department, Prime Minister's Office and TCC
Major Transportation Event	Tonga Police Force
Terrorist Activity	Tonga Police Force/ Tonga Defense Services
Water Contamination	Ministry of Health
Oil Spill	Marine and Port & Port Authority/ Ministry of Transport
Plane Crash	Police/Tonga Fire Service

National Emergency Response Procedures

Activation of the emergency management system will occur when there is a need for:

- monitoring of potential major threats or response operations;
- co-ordination of support to response operations being conducted by a response agency or agencies;
- coordination of resources in support of emergency response and relief operations.
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Event	National Emergency Management Office Action	National Emergency Operations Committee Action
	<ul style="list-style-type: none"> ✓ Receive information requiring activation of the emergency management system. ✓ Obtain independent confirmation if practicable. ✓ Notify Minister 	<ul style="list-style-type: none"> ○ Ensure that individual agency Business Continuity and Emergency Response Plans are ready for activation
Initial Advice of Impending Hazard Event	<ul style="list-style-type: none"> ✓ Notify National Emergency Management Committee and National Emergency Operations Committee members and advise members of the Diplomatic Corps ✓ Notify NEMC member organisations and remind them about the activation of their business continuity and emergency response plans 	
For ALL events requiring an activation of the emergency management system	<ul style="list-style-type: none"> ✓ Ensure that the National Emergency Operation/Coordination Centre is on standby ✓ Instigate contact with District Emergency Management Committees (DEMC) for the area(s) affected or likely to be affected by the event ✓ Check the emergency communications systems for the area(s) affected or likely to be affected by the event 	<ul style="list-style-type: none"> ○ Ensure that District Emergency Committees are aware of the situation and have their Emergency Response Plans ready for activation

- ✓ Activate Public Information Plan advising public of what to do in preparation for likely impact

- ✓ Liaise with TMS on progress of event

For cyclonic events - (12-24 hours from expected impact)

- ✓ Maintain contact with relevant DEMC's
- ✓ With TMS, brief NEOC on current situation and the possible requirement for evacuation.

- ✓ Liaise with TMS on progress of event

- ✓ Upgrade activation of NEOCC to maximum staffing on a 24 hour basis

For cyclonic events - (0-12 hours from expected impact)

- ✓ Update Minister and NEOC as appropriate
- ✓ Maintain contact with DEMC's
- ✓ Maintain public information, through live radio broadcasts

- ✓ Maintain liaison with TMS

Cyclone Impact

- ✓ Maintain contact with DEMC's, if possible

- Response Agencies to be on stand-by (Police, TDS, NGO's, MOW etc.)
- Meeting of NEOC (with relevant observers –Diplomatic corps etc.)
- Assess the likely requirement for an evacuation order
- Recommend the closure of schools
- Instigate staged closure of Government offices
- Activate individual agency business continuity and emergency response plans
- Monitor event as it approaches the country
- Monitor situation
- Ensure public are regularly informed

- ✓ Update Minister and NEOC as soon as practicable
- ✓ Maintain public information, through live radio broadcasts
- ✓ Liaise with TMS as appropriate.
- ✓ Collect Situation Reports from affected districts
- ✓ Maintain public information, through live radio broadcasts
- ✓ Instigate contact with District Emergency Management Committees from affected areas
- ✓ Receive initial situation reports and impact assessment information from District Emergency Management Committees
- ✓ Brief NEOC and NEMC as to overall initial impact assessment
- ✓ Identify whether there is a need to recommend a National Damage Assessment Team (NDAT) to conduct formal Initial Damage Assessment
- ✓ Prepare consolidated Initial National Situation Report
- ✓ Distribute Initial National Situation Report to:
 - Minister & NEMC
 - UNOCHA
 - SOPAC
 - Media
 - Diplomatic Corps
- Instigate liaison with District representatives
- Provide individual agency initial damage impact assessments to the NEOC
- Identify initial relief requirements
- NEMC Meeting
- Activate National Damage Assessment Team to the affected area(s), if required
- Activate emergency relief operations as required
- Provide information relative to the Initial National Situation Report
- Evaluate and/or analyse situation reports to determine extent of damage and decide whether a state of Emergency should be recommended
- Conduct Press release on overall situation

**Post Impact
(Within 24-48
hrs)**

**For ALL
events
requiring an
activation of
the disaster
management
system**

- ✓ Consolidate Situation Reports from all agencies involved in the response to the event.
 - Confirm Situation Report to determine if a State of Emergency should be declared for the affected areas and take necessary steps to that effect.
 - National Emergency Recovery Committee activated
 - Co-ordinate emergency relief activities
 - Liaise with Foreign Affairs on overseas emergency relief assistance as required
 - Provide Customs/Immigration/Quarantine support for any incoming international emergency relief supplies and personnel
 - Press Release
 - ✓ Prepare a formal National Situation Report, and repeat on a daily basis until the event management is ceased.
 - Final NEOC Meeting – Operational Debrief
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 - ✓ Provide comprehensive briefing to the Minister, and the NEMC
 - ✓ Distribute Formal National Situation Reports to:
 - Minister
 - NEMC
 - UNOCHA
 - SOPAC
 - Media
 - Diplomatic Corps
 - ✓ Maintain 24 hour NEOCC maximum staffing as required
 - ✓ Return NEOCC to standby mode
 - ✓ Confirmation check of communications systems
 - ✓ Conduct NEOC operational de-brief
 - ✓ Complete and submit final National Situation Report
 - ✓ Complete any other post-operational reports required.
- Post Impact (Within 48-72 hours)**
- For ALL events requiring an activation of the disaster management system**
- Operational Stand Down**

